

US DEPARTMENT OF AGRICULTURE  
FOREST SERVICE



*Northeastern Area*  
*State & Private Forestry*  
**DIVISION OF FOREST PEST CONTROL**

5230



US FOREST SERVICE  
NA - S&PF - FIELD OFFICE  
FEDERAL BLDG. - US COURT HOUSE  
316 ROBERT ST.  
ST. PAUL, MINN. 55101

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JACK-PINE BUDWORM EGG SURVEY ON THE  
MANISTEE NATIONAL FOREST - 1969

By Imants Millers

INTRODUCTION

The last severe defoliation of the jack-pine budworm, Choristoneura pinus pinus Free., occurred in 1965 and 1966. Since then the intensity and the extent of defoliation has declined. Small local pockets of defoliation have occurred every year. An annual population trend survey is made to observe fluctuations in order to develop methods of predicting severe outbreaks before damage occurs. This egg survey is a part of the trend survey.

RESULTS

Nine permanent plots are systematically scattered throughout the jack-pine type of the Forest. Each plot is a jack pine stand at least 5 acres in size. Each sample consists of 4, 36 inch long branches (2 from mid-crown and 2 from lower-crown) taken from each of 10 dominant/co-dominant trees located in a cluster. The number of tips (current shoots) and the number of egg-masses and the degree of their parasitization was determined by a crew at Toumey Nursery. The average number of eggs per 100 tips was calculated with the assumption that an average egg-mass has 50 eggs. The egg numbers of parasitized egg-masses were reduced in proportion to the parasitization. Populations of more than 50 eggs per 100 tips are considered capable of causing severe damage, provided all budworms survive until pupation.

RESULTS

In general, egg populations have declined from 1968, except for plot 459 (Table 1). In the latter, the population has doubled. If all larvae survive until pupation, considerable defoliation can be expected. However, assuming normal mortality (50% or more), severe damage should not occur.





Table 1. The results of the 1969 egg survey and comparison with the 1968 egg population.

Plot No.	Location			Number of eggs per 100 tips	
	T	R	S	1968	1969
451	21	10W	32	2	1
453	20	11W	2	7	0
454	20	11W	23	1	0
457	22	12W	18	0	0
458	21	15W	12	40	16
459	19	13W	22	31	79
460	16	15W	14	10	6
462	16	12W	33	13	6
463	16	11W	34	4	1